UNITED STATES MARINE CORPS
Logistics Operations School
Marine Corps Combat Service Support Schools
Training Command
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AIM 5302

STUDENT HANDOUT

REBUILD MK48 TRANSFER ASSEMBLY

GENERAL KNOWLEDGE: Initially, the lesson will impart the background knowledge that is required to repair the MK48 transfer assembly. The material content provides for the impartation of the following information:

1. Composition and design characteristics of the transfer assembly.

2. Principles of operation of the transfer assembly.

3. Intermediate maintenance responsibilities relative to the MK48 transfer assembly.

4. Repair procedures for the transfer assembly.

TERMINAL LEARNING OBJECTIVE: Given a MK48 transfer assembly, the required common and special tools, shop supplies, repair parts, TM 9-2320-297-20, and TM 9-2320-297-34, per information contained in the references, repair the transfer assembly. (5.3.2)

ENABLING LEARNING OBJECTIVES: Given a MK48 transfer assembly, the required tools, shop supplies, repair parts, TM 9-2320-297-20, and TM 9-2320-297-34, per information contained in the references:

1. disassemble the transfer assembly, (5.3.2a)

2. inspect the disassembled components for serviceability, (5.3.2b)

3. repair or replace the unserviceable components, and (5.3.2c)

4. assemble the transfer assembly from serviceable components. (5.3.2d)

OUTLINE

1. COMPOSITION AND DESIGN CHARACTERISTICS OF THE TRANSFER ASSEMBLY

a. Lubrication Pump. The lubrication pump picks up lubricating oil from the bottom of the transfer case and distributes it to the top of the transfer case, the front of the two-speed shift shaft, the rear of the two-speed shift shaft, and the declutch housing. This provides proper lubricant flow to all of the moving parts of the transfer assembly. The lubrication pump is mounted at the top rear of the transfer case.

b. Two-Speed Shift Shaft. The two-speed shift shaft is manually shifted by a shift cable between the transfer assembly and the cab of the MK48. By moving the shift handle in the cab, the driver can select either high range (1:1.165 gear ratio) or low range (1:2.116 gear ratio) to allow for different terrain and/or traction situations.

c. Locking Differential. The transfer assembly differential can be shifted from the unlocked to the locked position by a driver controlled air chamber located on the declutch housing. The unlocked, normal, position is used when traction is good. In this position, the front output shaft can rotate at a different speed from the rear output shaft. The locked position locks the differential and makes the front and rear output shafts turn at the same speed.

d. Speedometer Transducer. The speedometer transducer is mounted on the rear of the transfer case. Its function is to turn the rotation of the idler gear into an electrical signal. The speedometer uses this signal to determine the vehicle speed.

2. PRINCIPLES OF OPERATION OF THE TRANSFER ASSEMBLY

a. The transfer assembly is mounted in the vehicle drive line behind the transmission. It transmits power downward for distribution to the front and rear propeller shafts.

b. The input shaft flange receives power from the transmission propeller shaft. The input shaft drives both the

two-speed shift shaft and the lubrication pump. The two-speed shift shaft drives the lockable differential. A bevel gear type interaxle differential assembly is provided in the transfer case to allow for the different front output and rear output shaft speeds encountered when turning a corner. An air-actuated, driver selected, differential locking mechanism is provided to lock differential action for positive transfer of power to the front and rear body section axles under wheel slippage conditions. The differential drives the front output shaft and, through an idler gear, it also drives the rear output shaft. The idler shaft also drives the speedometer transducer.

c. The case forms a sump for lubricating oil and a pump is provided for lubrication.

3. INTERMEDIATE MAINTENANCE RESPONSIBILITIES RELATIVE TO THE MK48 TRANSFER ASSEMBLY

a. Intermediate Maintenance is responsible for replacement and repair of the transfer case assembly.

b. You are also responsible for replacement of the oil seals located at the input and output flanges, and repair of the lockup air chamber.

4. DISASSEMBLE THE TRANSFER CASE ASSEMBLY

a. Detailed instructions for repairing the MK48 transfer assembly are contained in the manuals that were issued to you at the beginning of this block of instruction. Follow those instructions carefully to effect those repair procedures on the training aid transfer case to which you have been assigned.

b. Have the instructor assigned to your station check your work at each point designated in this student handout.

c. Refer to TM 9-2320-297-34 for the procedures used to perform the repair steps listed. Use the index to locate the instructions in the manual and read the instructions carefully before performing each task.

d. The manual instructs you to discard seals, O-rings, gaskets, and often, capscrews and lockwashers. DO NOT discard anything unless you are instructed to do so by the instructor.

e. Remove input flange.

f. Mark and remove 5 covers

g. Remove rear cover.

h. Remove all shafts and gears.

STOP! Notify instructor.

i. Remove front cover and declutch housing.

j. Remove 2-speed shift shaft and differential assembly.

STOP! Have instructor initial.

k Inspect transfer case assembly components.

5. REPAIR THE DECLUTCH HOUSING

a. Remove retainer plate.

b. Remove flange.

c. Remove bearing cap.

d. Remove shaft.

e. Remove bearing.

f. Remove shift fork.

g. Inspect declutch housing components.

STOP! Have instructor initial.

h. Install shift fork shaft.

i. Install bearings.

j. Install shaft and bearing cap.

k. Install flange.

l. Install retainer plate.

STOP! Have instructor initial.

6. REPAIR THE REAR OUTPUT SHAFT AND IDLER SHAFT - Inspect rear output and idler shaft components.

STOP! Have instructor initial.

7. REPAIR THE DIFFERENTIAL ASSEMBLY

a. Remove bearing.

b. Remove gear and separate case halves.

c. Remove thrust washer.

d. Remove pinion gears.

e. Remove side gear.

f. Inspect differential components.

STOP! Have instructor initial.

g. Install pinion gears.

h. Install thrust washer.

i. Install gear and case halves.

j. Install bearing.

STOP! Have instructor initial.

8. REPAIR THE 2-SPEED SHIFT SHAFT

a. Remove spacer.

b. Remove gear.

c. Remove clutch collar.

d. Remove retainer plate.

e. Remove bearings.

f. Inspect shift shaft components.

STOP! Have instructor initial.

g. Install gear.

h. Install bearing.

i. Install retainer plate.

j. Install clutch collar.

k. Install spacer.

STOP! Have instructor initial.

9. REPAIR THE INPUT SHAFT - Inspect input shaft components.

STOP! Have instructor initial.

10. ASSEMBLE THE MK48 TRANSFER ASSEMBLY FROM SERVICEABLE COMPONENTS

a. Install 2-speed shift shaft, shift rail, and differential.

STOP! Have instructor initial.

b. Install declutch housing and front cover.

STOP! Have instructor initial.

c. Install shafts and lockwire.

STOP! Have instructor initial.

d. Install rear housing.

STOP! Notify instructor.

e. Adjust rear output shaft end play.

STOP! Have instructor initial.

f. Adjust idler shaft end play.

STOP! Have instructor initial.

g. Adjust 2-speed shift shaft end play.

STOP! Have instructor initial.

h. Adjust input shaft end play.

STOP! Have instructor initial.

REFERENCES:

TM 9-2320-297-20
TM 9-2320-297-34